2016 WESTERN SOUTH DAKOTA HYDROLOGY CONFERENCE
PRELIMINARY PROGRAM

Thursday, April 7, 2016
Alpine/Ponderosa Rooms and Rushmore F, G, and H
Rushmore Plaza Civic Center

7:00 – 8:00 a.m.	**REGISTRATION**		
8:00 – 10:20 a.m.	**Plenary Session 1 in Alpine and Ponderosa Rooms – Water, Food, and Energy—Connections, Challenges, and Solutions (2.0 PDH)** **Moderator – Mark Anderson**, U.S. Geological Survey		
8:00 – 8:10 a.m.	Welcome, general information		**Mark Anderson** and **Daniel Driscoll**, U.S. Geological Survey
8:10 – 8:50 a.m.	Keynote: Interstate Water Litigation: Challenges and Solutions through Present Cases		**Don Blankenau**, Blankenau Wilmoth Jarecke LLP
8:50 – 9:30 a.m.	Keynote: Challenges in Groundwater Assessment for Agriculture and Energy Development		**Dr. William Alley,** National Groundwater Association
9:30 – 10:00 a.m.	Invited: South Dakota's River Basin Natural Resource Districts—Experiment at Water Resource Management		**Jay Gilbertson**, East Dakota Water Development District
10:00 – 10:40 a.m.	**REFRESHMENT BREAK in Rushmore G**		
10:40 a.m. – 12:00 p.m.	**Concurrent Session 2A in Alpine Room – Engineering Solutions (1.0 PDH)** **Moderator – Scott Kenner**, South Dakota School of Mines and Technology	**Concurrent Session 2P in Ponderosa Room – Groundwater Modeling (1.0 PDH)** **Moderator – TBA**, TBD	**Concurrent Session 2H in Rushmore H Room – Land-Use Change (1.0 PDH)** **Moderator – Dan Driscoll**, U.S. Geological Survey
10:40 – 11:00 a.m.	*Using 1972 flood memories to protect Rapid Creek greenway for the future* **– Suzanne Martley**, Friends of Rapid City Parks	*Characterization of physical controls on stream base flow and the flux of surface water and groundwater using multivariate analysis in the Northern Great Plains* – **Jennifer Bednar, and Andrew Long**, U.S. Geological Survey	*Impacts of land use and climate change on hydrological processes in James River watershed* **– Manashi Paul, Laurent Ahiablame**, South Dakota State University, and **Mohammad Adnan Rajib**, Purdue University
11:00 – 11:20 a.m.	*Hydrologic methods for a flood hazard re-study of the Saltese Flats in Spokane County, WA* **– Michael Rotar** and **Tyler French**, RESPEC	*Use of airborne electromagnetic surveying to delineate the Big Sioux aquifer for groundwater modeling* – **Gregory Delzer, Karl Koth,** and **Kyle Davis**, U.S. Geological Survey, **Jeff Dunn**, City of Sioux Falls	*Sensitivity of Black Hills hydrology to land-use change using WRF-Hydro* **– Lucas Barrett** and **William Capehart**, South Dakota School of Mines and Technology
11:20 – 11:40 a.m.	*Restoring Spearfish Creek to a more natural setting* **– Jonathan Lefers**, Advanced Engineering and Environmental Services, Inc. (AE2S)	*Hydrogeologic training and use of MODFLOW groundwater model for the Tuul River Basin, Mongolia – Phase I* – **Joshua Valder, Janet Carter, Mark Anderson,** and **Kyle Davis**, U.S. Geological Survey	*Simulation of the effects of deforestation on headwater streams in the Black Hills, western South Dakota* **– Brian Freed,** South Dakota School of Mines and Technology, **Galen Hoogestraat**, U.S. Geological Survey, and **Scott Kenner**, South Dakota School of Mines and Technology
11:40 – 12:00 p.m.	*Hydraulic and sediment transport analysis of the Missouri River near Williston, North Dakota* **– Jonathan Lefers**, Advanced Engineering and Environmental Services, Inc. (AE2S)	*Hydrogeologic training and use of MODFLOW groundwater model for the Tuul River Basin, Mongolia – Phase 2*– **Kyle Davis, Mark Anderson, Joshua Valder**, and **Janet Carter**, U.S. Geological Survey	*Geochemical impacts of mountain pine beetles on Rapid Creek, SD* **– Jesse Punsal, Erik Vik, Heidi Sieverding, Scott Kenner, Lisa Kunza,** and **Scott Kenner,** South Dakota School of Mines and Technology

12:00 – 1:30 p.m.	**LUNCH in Rushmore F Room (1.0 PDH) –** with accompanying presentations **RESPEC:** *TBA* **– TBA** **John T. Loucks Distinguished Lecture** – "Food/Energy/Water Nexus Challenges and Potential Solutions for the Northern Great Plains" by Dr. James Stone, South Dakota School of Mines and Technology		
1:40 – 3:20 p.m.	**Concurrent Session 3A in Alpine Room – Williston Basin Development and Effects (1.5 PDH)** **Moderator – Gregory Delzer**, U.S. Geological Survey	**Concurrent Session 2P in Ponderosa Room – Food, Water, Energy Solutions (and Caves!) (1.5 PDH)** **Moderator – James Stone**, South Dakota School of Mines and Technology	**Concurrent Session 3H in Rushmore H Room – 2015 Hydrologic Extremes and Management (1.5 PDH)** **Moderator – Melissa Smith**, National Weather Service
1:40 – 2:00 p.m.	*Development of a historical water-quality database for samples collected in the Williston Basin of North Dakota, Montana, and South Dakota* **– Robert Lundgren, David Bender, Rochelle Nustad**, and **Gregory Delzer,** U.S. Geological Survey	*Food-energy-water nexus: Critical sustainability thresholds for the Upper Great Plains* – **Heidi Sieverding** and **James Stone**, South Dakota School of Mines and Technology	*Feast or famine: What led to record-breaking rainfall in western South Dakota during the summer of 2015* **– Aaron Ward**, National Weather Service
2:00 – 2:20 p.m.	*Characterization of historical water-quality data within the Williston Basin of North Dakota, Montana, and South Dakota* **– Gregory Delzer, Robert Lundgren, Rochelle Nustad**, and **David Bender**, U.S. Geological Survey	*Biodiesel supply chain optimization in the Northern Great Plains region* – **Hyunju Jeong, Heidi Sieverding,** and **James Stone**, South Dakota School of Mines and Technology	*High-flow streamflow conditions during 2015 in western South Dakota* **– Joyce Williamson** and **Daniel Driscoll,** U.S. Geological Survey
2:20 – 2:40 p.m.	*Quality and age of shallow groundwater in the Bakken Formation production area* **– Joshua Valder** and **Peter McMahon**, U.S. Geological Survey	*Western water use management modeling—A decision support tool for the southern Nebraska panhandle* **– Thad Kuntz**, Adaptive Resources, Inc.	*Water year 2015 management and flood operations: record elevations and releases* **– Jeffrey Nettleton, Steven Schelske, and Ginger Wessels**, Bureau of Reclamation
2:40 – 3:00 p.m.	*Estimating water use associated with unconventional oil and gas development* **– Janet Carter, Gregory Delzer, Kathleen Rowland,** and **Joanna Thamke**, U.S. Geological Survey	*New observations on the origin of Jewel Cave* **– Michael Wiles**, Jewel Cave National Monument	*Technological advances in flash flood warning methods* **– Susan Sanders**, National Weather Service
3:00 – 3:20 p.m.	*Integrated science studies of effects of oil and gas development on ecosystems in the Williston Basin* **– Bruce Smith, Todd Preston, Aida Farag, Chauncey Anderson, Joanna Thamke, Brian Tangen, Max Post Van der Burg, David Naftz, David Harper,** and **Robert Gleason**, U.S. Geological Survey		*Public information, public warning, and emergency response related to high flow events in Pennington County during May and June 2015* **– Dustin Willett**, Pennington County Emergency Management
3:20 – 3:50 p.m.	**REFRESHMENT BREAK in Rushmore G**		
3:50 – 5:10 p.m.	**Concurrent Session 4A in Alpine Room – Management Strategies (1.0 PDH)** **Moderator – Jay Gilbertson**, East Dakota Water Development District	**Concurrent Session 4P in Ponderosa Room – Water Quality (1.0 PDH)** **Moderator – Joanne Noyes**, South Dakota Department of Natural Resources	
4:10 – 4:30 p.m.	*Helping Minnesota implement its nutrient reduction strategy and reduce its impact on downstream water supporting local, state, and international water quality efforts* **– Megan Burke, Julie Blackburn**, and **Chris Lupo**, RESPEC	*Perchlorate and selected metals associated with fireworks occurrence within Mount Rushmore National Memorial, South Dakota, 2011-2015* **– Galen Hoogestraat**, U.S. Geological Survey	
4:10 – 4:30 p.m.	*Hydrologic and water quality impacts of drainage management strategies in eastern South Dakota* **– Ashik Sahani, Laurent Ahiablame, and Christopher Hay,** South Dakota State University	*Does Didymosphenia geminate alter benthic resource availability and macroinvertebrate diet selection?* **– Lisa Kunza**, and **R.W. Marlow**, South Dakota School of Mines and Technology	
4:30 – 4:50 p.m.	*Developing a web-based irrigation decision support system for Benton County, Minnesota* **– Jared Oswald, Julie Blackburn**, RESPEC, and **Gerry Maciej,** Benton SWCD	*Tritium in groundwater in the southern Black Hills* **– Perry Rahn**, South Dakota School of Mines and Technology	

4:50 – 5:10 p.m.	*Life cycle assessment of low impact development technologies combined with conventional system for residential zones in the City of Atlanta, Georgia* **– Hyunju Jeong**, South Dakota School of Mines and Technology, **Osvaldeo Broesicke**, Georgia Institute of Technology, **Bob Drew**, Rainwater Collection Systems, **Dou Li,** Crittenden and Associates, **and John Crittenden**, Georgia Institute of Technology	*Perfluorochemicals (PFCs): An emerging contaminant class with far-reaching human health and environmental implications* **– Shalene Thomas**, Amec Foster Wheeler	
5:10 – 7:00 p.m.	**POSTER SESSION AND EVENING SOCIAL (with refreshments) in Rushmore G**		
	Drainage management practices to improve water quality in eastern South Dakota **– Laurent Ahiablame, Christopher Hay, and Ashik Sahani**, South Dakota State University		
	Comparison of reference evapotranspiration estimated by automated weather station and measured with an atmometer **– Arturo Reyes-Gonzalez, Todd Trooien, Christopher Hay**, South Dakota State University, and **Jeppe Kjaersgaard**, Minnesota Department of Agriculture		
	Vegetative best management practices for controlling roadway runoff **– Alex Boger, Laurent Ahiablame**, and **Dwayne Beck**, South Dakota State University		
	Steps toward building groundwater modeling capacity in Mongolia **– Janet Carter, Mark Anderson, Joshua Valder**, and **Kyle Davis**, U.S. Geological Survey		
	Applications of soil and vegetation data on bedrock identification **– Cori Christensen**, South Dakota School of Mines and Technology		
	Examining differences in algal composition in Lake Kampeska and the nutrient removal facility **– Taylor Clemmons** and **Lisa Kunza**, South Dakota School of Mines and Technology		
	Estimating water usage related to unconventional oil and gas development in the Williston Basin in North Dakota, Montana, and South Dakota **– Amy Gnoinsky, Christina Hargiss**, North Dakota State University, **Kathleen Rowland**, and **Janet Carter,** U.S. Geological Survey		
	Watershed decomposition: New GIS methods for watershed scale long valley profile analysis **– Kyle Hazelwood** and **Larry Stetler**, South Dakota School of Mines and Technology		
	Impacts of grassland conversion on hydrology and water quality in the Bad River watershed, South Dakota **– Jiyeong Hong, Laurent Ahiablame**, South Dakota State University, and **Kyoung Jae Lim**, Kangwon National University, Chuncheon, South Korea		
	Establishing gene fingerprints of pathogenic bacteria along selected reaches of Rapid Creek, Skunk Creek, and the Big Sioux River **– Kelsey Murray, Lisa Kunza,** and **Linda DeVeaux**, South Dakota School of Mines and Technology		
	Identifying bacterial genes encoding for antimicrobial resistance in selected areas of the Big Sioux River **– Ashley Preston, Lisa Kunza,** and **Linda DeVeaux**, South Dakota School of Mines and Technology		
	*Modeling the hydrological impact with land cover change over time***– Patrick Shaw** and **Scott Kenner**, South Dakota School of Mines and Technology		
	Evaluation of integrated drainage water and agricultural management strategies for water quality protection **– Shailendra Singh, Laurent Ahiablame,** and **Christopher Hay**, South Dakota State University		
	Using denitrification bioreactors and phosphate adsorption media to remove nutrients from agricultural subsurface drainage water **– Utsav Thapa, Laurent Ahiablame, Todd Trooien,** South Dakota State University, **Jeppe Kjaersgaard**, Minnesota Department of Agriculture, **Guanghui Hua**, and C**hristopher Hay**, South Dakota State University		